

ABSTRACT

A liquid crystal optical performance monitor is described that employs a liquid crystal tunable filter for receiving a P-polarization beam and a rotated S-polarization beam from a C-polarizer. The rotated S-polarization beam from a birefringent crystal in C-polarizer propagates through a waveplate which rotates the polarization by 90 degrees, resulting in the rotated S-polarization beam having the same polarization orientation as the P-polarization beam. The liquid crystal tunable filter therefore receives just the P-polarization orientation. The C-polarizer and a small beam collimator are rotated so that the polarization orientation of the P-polarization beam and the rotated S-polarization beam matches the orientation of the LC inside the LC cavity of the LC tunable filter. In a first embodiment, the liquid crystal optical performance monitor is implemented with a photodiode. In a second embodiment, the liquid crystal optical performance monitor is implemented with a bi-cell photodiode.